

Measuring chambers 8 mm

9803 509 5020 .

9890 000 701 ..

9890 000 016 ..

FILING INSTRUCTIONS

File this documentation in binder:

UNIT manual generator

UNIT manual Compact DIAGNOST 1

Measuring chambers 8 mm

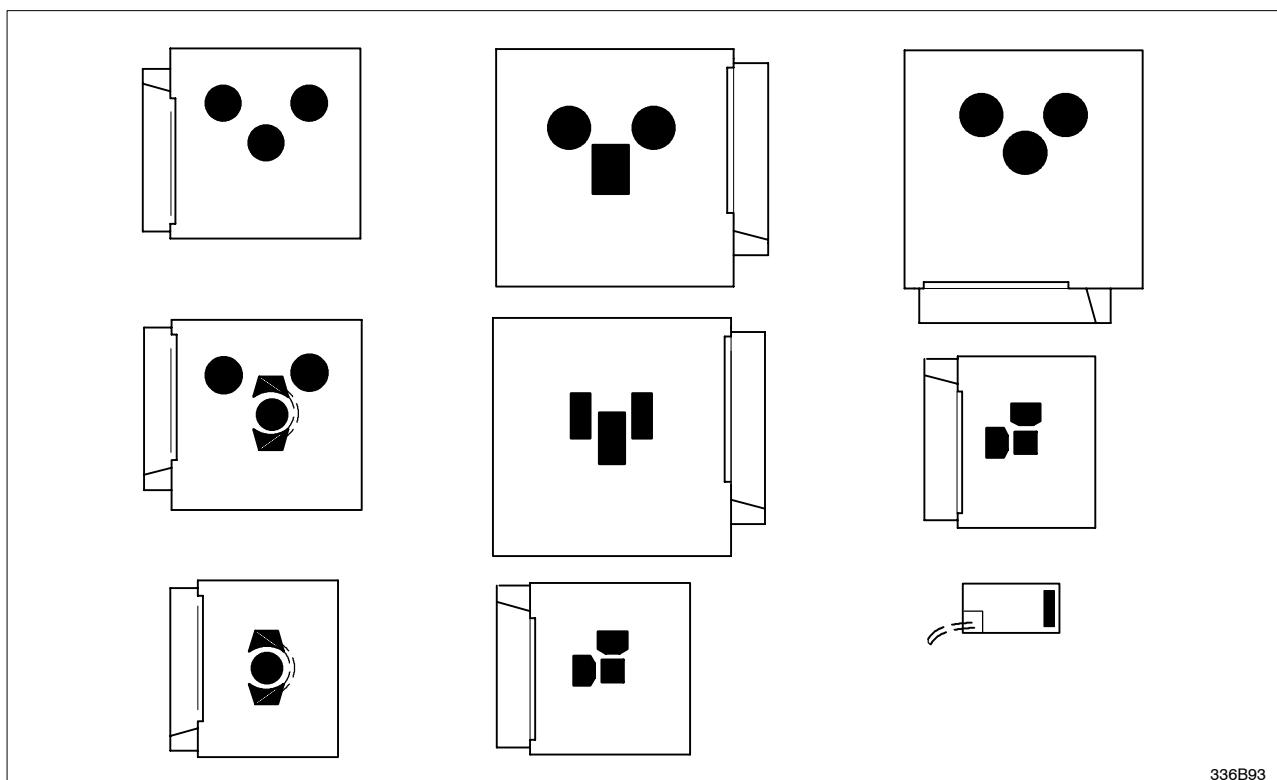
9890 000 0161 . / 9890 000 0162 .
9890 000 0163 . / 9890 000 0164 .
9890 000 0165 . / 9890 000 0166 .
9890 000 0167 . / 9890 000 0168 .
9803 509 5020 . / 9890 000 7010 .
9890 000 7011 .

Measuring chamber cables

9803 507 0 . . 02 / 9890 000 017 . .

Adapter AMPLIMAT cable, 3-plus connector to sub-D connection

9890 000 02331



336B93

Ionization measuring chambers 8 mm for connection to AMPLIMAT exposure controls

DMC Hamburg

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SERVICE MANUAL - UNIT

Measuring chambers 8 mm

Author: **Th. Frenscheck**

Measuring chamber cables

Adapter AMPLIMAT cable, 3-plus to sub-D connection

Type No: 9890 000 0161 . / 9890 000 0162 .

Type No: 9890 000 0163 . / 9890 000 0164 .

Type No: 9890 000 0165 . / 9890 000 0166 .

Type No: 9890 000 0167 . / 9890 000 0168 .

Type No: 9803 509 5020 . / 9890 000 7010 .

Type No: 9890 000 7011 .

Type No: 9803 509 0 . . 02 / 9890 000 017 . .

Type No. 9890 000 02339

In case there are any questions concerning this manual,
please send this LOPAD via fax to 49/(0)40/5078 2481

File: measuring chambers 8mm_74223AD

List of pages and drawings (LOPAD)

Manual Order No: 4512 101 74223
released: 02/2005

0.5 223 mm (Rosa Karton)

1

2

3...6 (a/03.0)

Z- 1 (b/05.0) A4

Z- 2 (b/05.0) A4

Z- 3 (95.0) A4

Z- 4 (88.0) A4

Z- 5 (a/96.0) A4

TEXT

| | |
|---|---|
| Contents | 3 |
| 1. Ionization measuring chambers 8 mm | 3 |
| 2. Measuring chamber cables for 8 mm chamber and adapter AMPLIMAT cable | 3 |
| 2.1. Measuring chamber cables for MCM / SCM / MEDIO CP/ SCP / Power Part OMCP | 3 |
| 2.2. Measuring chamber cables for generator optimus | 4 |
| 2.3. Adapter for chamber cables 9890 000 0233. | 4 |
| 3. Installation | 4 |
| 3.1. Installation of 8 mm chambers in 16 mm frames | 4 |
| 3.2. Connection of the 8 mm measuring chambers | 4 |
| 3.3. Sensitivity changeover of the junior DIAGNOST/extremity measuring chamber | 4 |
| 4. Checking the order of the measuring fields and checking them for proper operation | 5 |
| 4.1. 3-field measuring chambers | 5 |
| 4.2. Measuring chambers for serial changers | 6 |
| 4.2.1. Checking the medium field | 6 |
| 4.2.2. Checking the additional fields | 6 |
| 4.3. Checking the lateral fields | 6 |

DRAWINGS

| | |
|---|-----|
| Amplifier of 8 mm measuring chamber, circuit principle | Z-1 |
| Measuring chambers 8 mm | Z-2 |
| Measuring chamber cables | Z-3 |
| Installation of 8 mm measuring chamber in 16 mm frame | Z-4 |
| Connection versions AMPLIMAT – measuring chamber/ Adapter for chamber cable | Z-5 |

1. Ionization measuring chambers 8 mm

Ionization chambers are measuring elements for the automatic exposure control (Amplimat). For different versions refer to Z-2.

Z-1 shows a general schematic amplifier diagram. However, repair work is practically impossible.

2. Measuring chamber cables for 8 mm chambers and adapter AMPLIMAT cable

For the different connections between AMPLIMAT and measuring chamber refer to Z-5.

2.1. Measuring chamber cable for generators MCM / SCM / MEDIO CP/ SCP / Power Part OMCP

9803 507 0 . . 02

| | |
|-----|---------|
| 0 8 | length: |
| 1 2 | 8 m |
| 1 6 | 12 m |
| 2 0 | 16 m |
| 2 4 | 20 m |
| 2 8 | 24 m |
| | 28 m |

2.2. Measuring chamber cable for generator OPTIMUS

9890 000 017 . .

| | | |
|---|---|---------|
| | | length: |
| 2 | 1 | 12 m |
| 3 | 1 | 16 m |
| 4 | 1 | 20 m |
| 5 | 1 | 24 m |

2.3. Adapter for chamber cable 9890 000 0233.

This adapter prepares the AMPLIMAT in OPTIMUS generators to older measuring chambers requiring +40 V to +45 V for operation.

This adapter also establishes connection between plugs Sub-D —— 3 plus (3+).

For principle refer to Z-5.

3. Installation

The illustration on Z-2 shows the more sensitive position, provided the plan view is the radiation entry plane.

If the chamber is installed the other way round (entrance of radiation from behind), the sensitivity is reduced by about 18%.

3.1. Installation of 8 mm chambers in 16 mm frames (see Z-4)

- Install the ionization chamber electrically insulated.

For Philips bucky trays use 4 spacing strips (code No. 4512 102 19901)
or 4 spacing strips (code No. 4512 103 06021).

3.2. Connection of the 8 mm measuring chambers (see Z-3)

Caution!

With older measuring chambers only 1 earth conductor was needed.

Therefore connection

PH109 —— Amplimat N

was not established and served as a reserve wire only. When more recent measuring chambers are installed this connection must be established for otherwise the field selection does not work.

3.3. Sensitivity changeover of the junior DIAGNOST/extremity measuring chamber

For exposures with intensifying screen do not connect 101 PH; high sensitivity.

- For screenless films raise the capacity of the integrating capacitor by activating 101 PH (S2).

4. Checking the order of the measuring fields and checking them for proper operation

The measuring fields are activated as follows:

| measuring chamber | button or automatic | field | connector 14 - pole amplimat | colour of cable | connector of measuring chamber | field No. of measuring chamber | dominant |
|-------------------|---------------------|-------|------------------------------|-----------------|--------------------------------|--------------------------------|---|
| bucky | | L | A | white/black | 101 | 1 |  |
| | | M | D | red | 102 | 2 |  |
| | | R | H | violet | 103 | 3 |  |
| scopomat | automatic | L | A | white/black | 101 | 1 |  |
| | automatic | M | D | red | 102 | 2 |  |
| | automatic | R | H | violet | 103 | 3 |  |

to avoid wrong activation an exchange of leads A/H is necessary for SCOPOMATIC chambers in MAXIMUS CM, SUPER CM, MEDIO CM and SUPER CP generators: white/black → H, violet → A.

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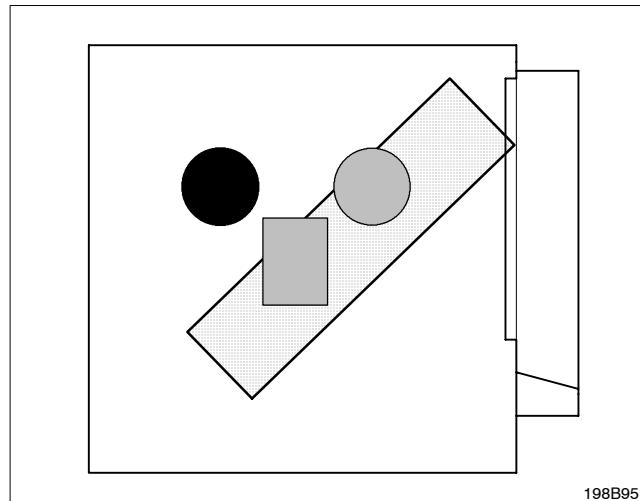
Check of functions

1...2 mm thick lead cover strip of 80 x 300 mm size required.

- Select exposure voltage 40 kV..60 kV.

4.1. 3-field measuring chambers

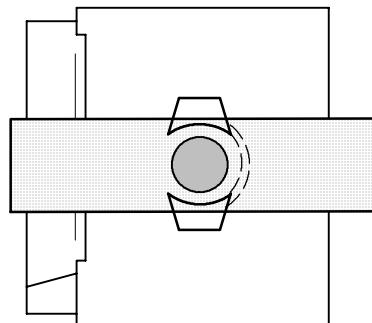
- Insert a large cassette.
- Select the left-hand measuring field.
- Cover the right-hand and medium measuring field.
- Switch an exposure.
The Amplimat terminates the exposure.
- Switch off left-hand measuring field.
- Select the right-hand field.
- Switch an exposure.
- The exposure must show a noticeably longer switching time.
- If not, exchange the connections
(101 PH and 103 PH) or A and H and repeat the check.
- Check the medium field in the same way.
- For operation of the pediatric Amplimat chamber bucky for children establish connection between A and H.



4.2. Measuring chambers for serial changers

4.2.1. Checking the medium field

- Insert a cassette.
- Switch an exposure with the stomach cone.
The Amplimat terminates the exposure.
- Cover the medium field horizontally.
- Switch an exposure.
The exposure is noticeably longer.



196B95

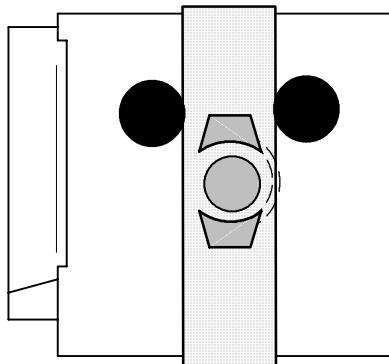
4.2.2. Checking the additional fields

The medium field remains covered up.

- Switch an exposure without cone.
The Amplimat terminates the exposure.
- Cover the medium and additional fields vertically.
- Switch an exposure.
The exposure is noticeably longer.

4.3. Checking the lateral fields

- Insert a large cassette.
- Cover the medium and additional fields vertically.
- Switch an exposure (full size).
The Amplimat terminates the exposure.
- Break in the oesophagus diaphragm.
- Switch an exposure.
The exposure is noticeably longer.



197B95

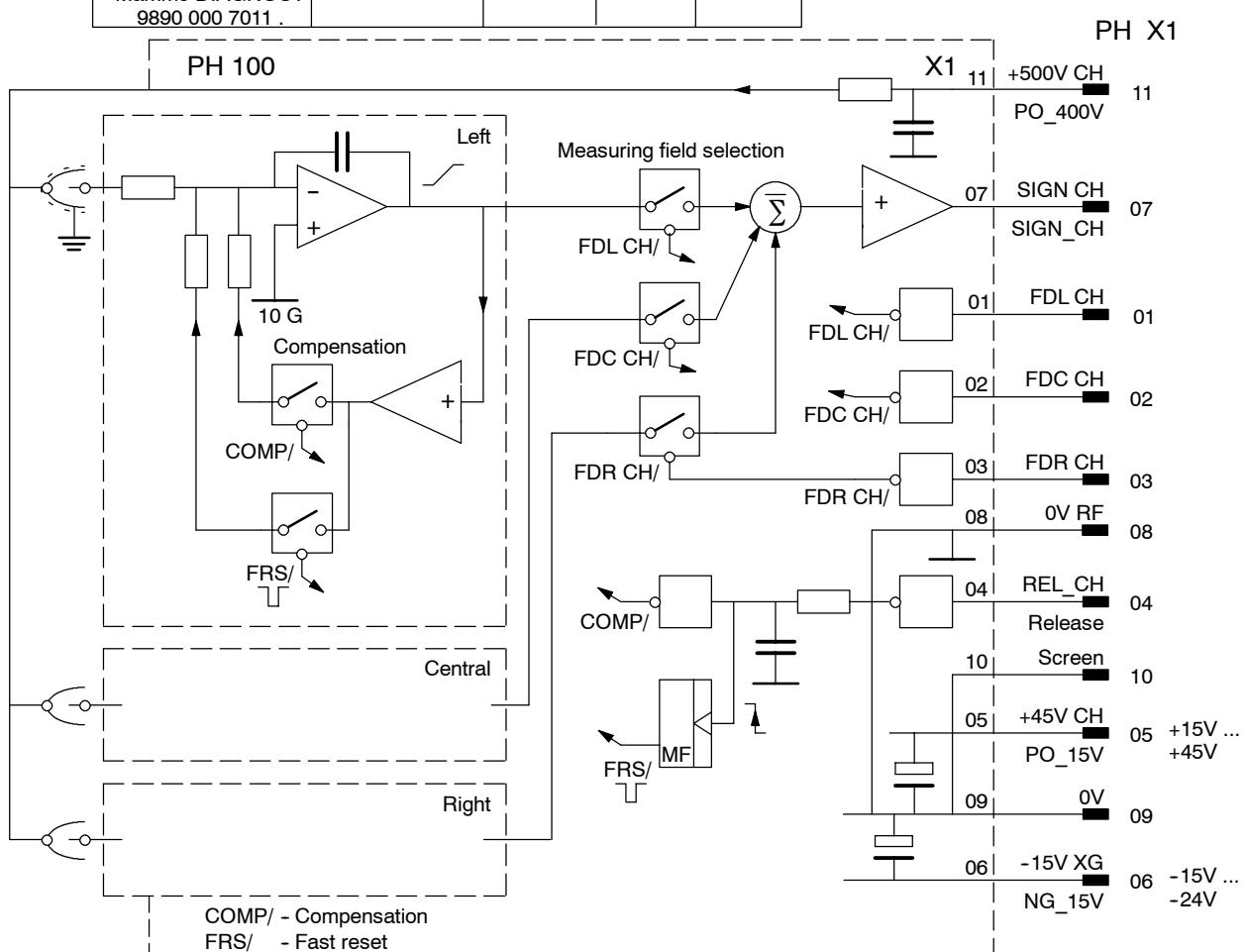
| Measuring chamber | Field representation | Measuring field | Chamber plug PH X1 | possible Colour of cable |
|---|----------------------|----------------------------|----------------------|--------------------------|
| Neuro DIAGNOST 9890 000 0167. | | FDR CH FDC CH FDL CH | 03 02 01 | vi rd wt / blk |
| Cranio DIAGNOST 9890 000 0168. | | FDR CH FDC CH FDL CH | 03 02 01 | vi rd wt / blk |
| Childrens BUCKY 9890 000 0162. | | FDL CH FDC CH | 01 02 insulate | wt / blk rd vi |
| SCOPOMAT 63/73/62/70 9890 000 0163. | | FDR CH FDC CH FDL CH | 03 02 01 | vi rd wt / blk |
| SCOPOMAT 71/74 9890 000 0164. | | FDC CH FDL CH | insulate 02 01 | vi rd wt / blk |
| SCOPOMAT 42/52 9890 000 0165. | | FDR CH FDL CH FDC CH | 03 01 02 | wt / blk rd vi |
| BUCKY 9890 000 0161. | | FDL CH FDR CH FDC CH | 01 03 02 | wt / blk rd vi |
| BUCKY (Reverse) 9890 000 0161. | | FDR CH FDL CH FDC CH | 03 01 02 | wt / blk rd vi |
| Chest cassette stand 9890 000 0166. | | FDL CH FDR CH FDC CH | 01 03 02 | wt / blk rd vi |
| Extremities 9803 509 5020. Junior DIAGNOST 9890 000 7010. Mammo DIAGNOST 9890 000 7011. | | FDL CH ^Δ | 01 | wt / blk |

Interlink contacts
A and H in the
Amplimat connection plug

Exchange vi and wt/blk at MAXIMUS CM,
SUPER CM and SUPER CP generators

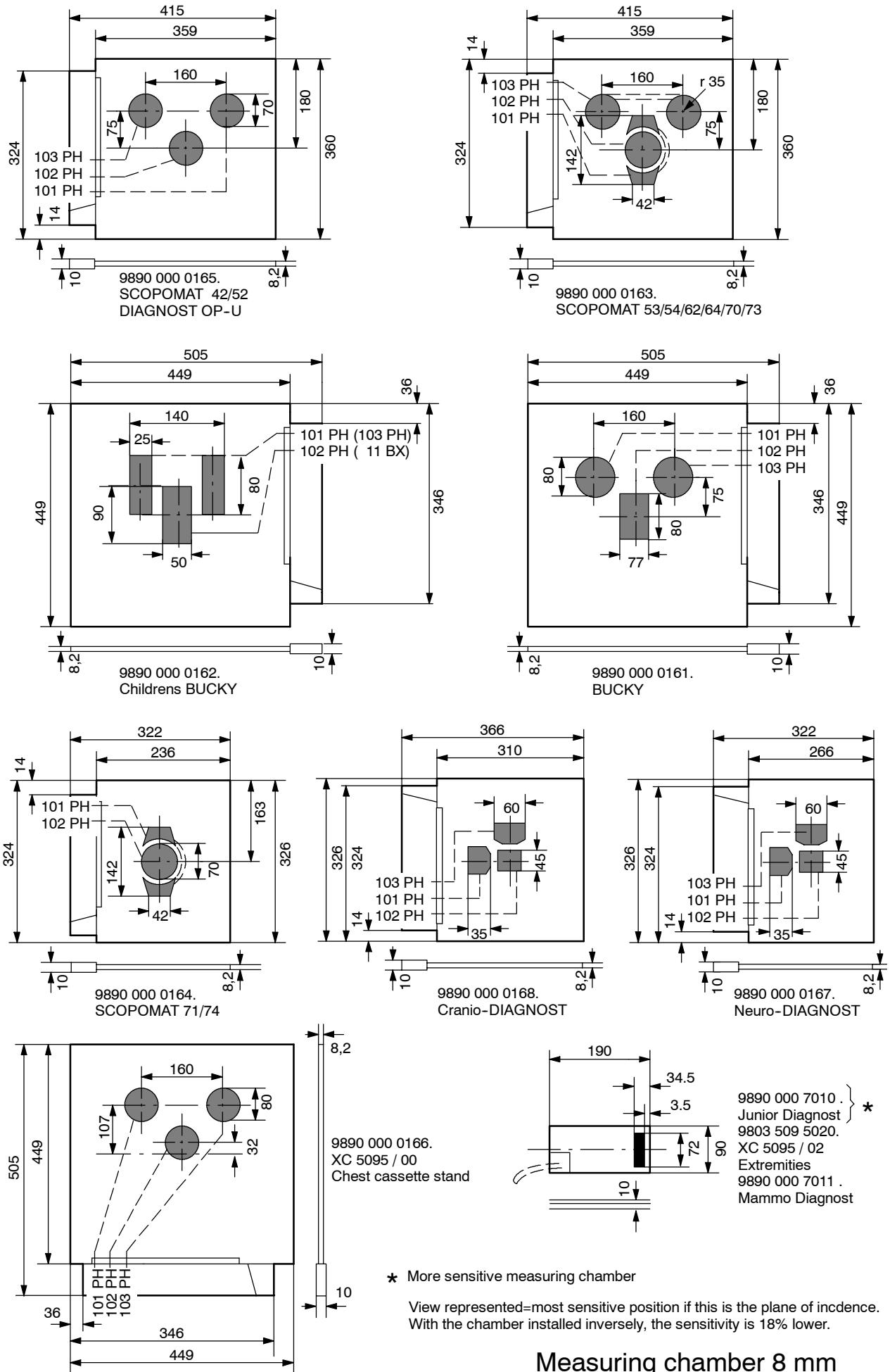
Δ no chamber selection but
sensitivity selection

Ampl. measuring chamber

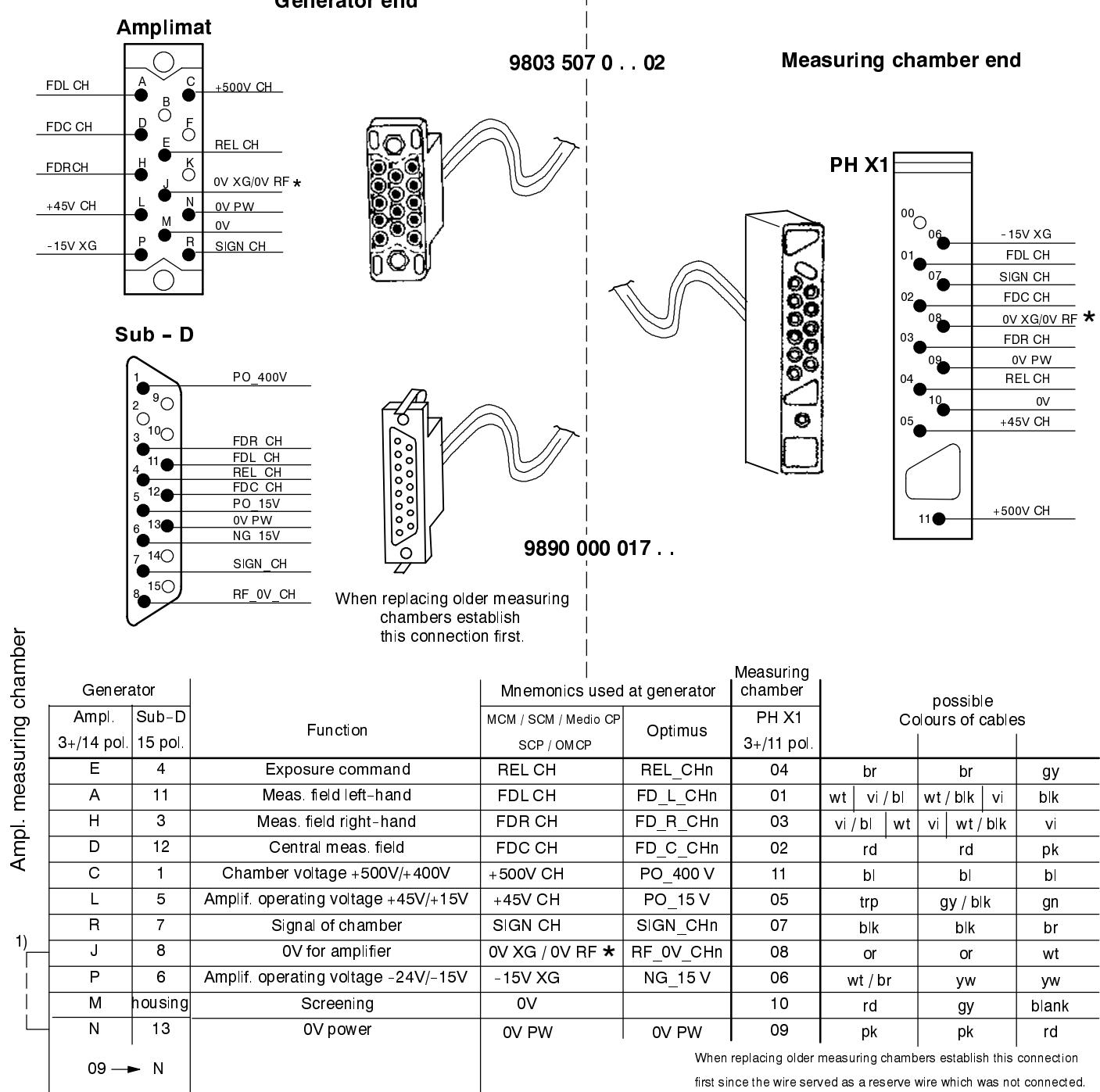


A4 03-05-13 Sie.
UNIT 9803 509 x0x02_Z1

Amplifier of 8 mm measuring chamber Circuit principle



Measuring chamber 8 mm



1) Pins 8 and 9 on PCB PH 100 connected.

With over - table tube : look in the direction of radiation.

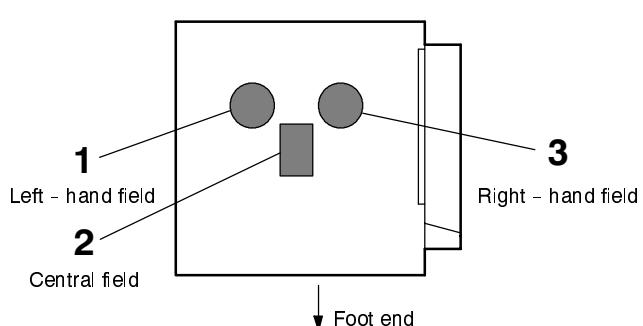
With serial changers and under - table tube : look towards the direction of radiation.

* SCP

A4 95-05-11
9803 509 x0x02_z3

() Colour code for earlier types of cables

bl = blue
blk = black
br = brown
gn = green
gy = grey
or = orange
pk = pink
rd = red
trp = transparent
vi = violet
wt = white
yw = yellow

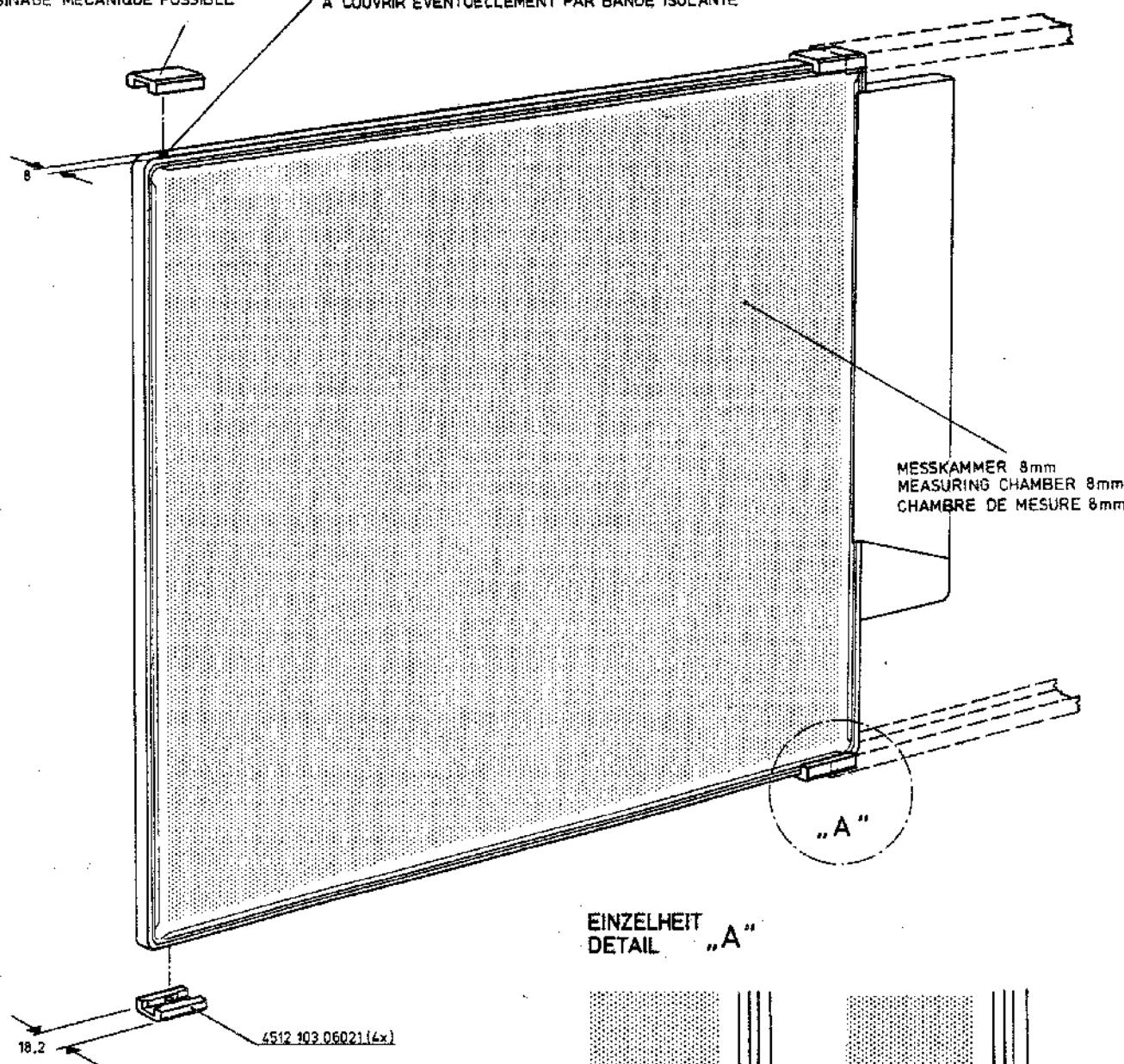


Measuring chamber cable

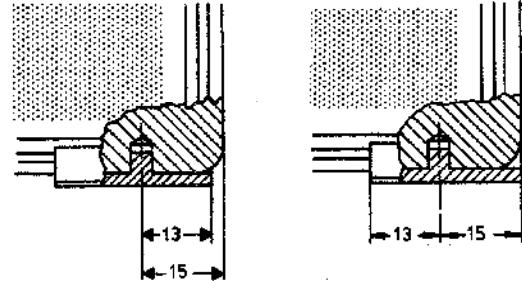
MECHANISCHE BEARBEITUNG MÖGLICH
MACHINING POSSIBLE
USINAGE MÉCANIQUE POSSIBLE

EVTL. MIT ISOLIERBAND ÜBERKLEBT
POSSIBLY COVERED WITH INSULATING TAPE
A COUVRIR EVENTUELLEMENT PAR BANDE ISOLANTE

AMPL. MEASURING CHAMBER



EINZELHEIT
DETAIL „A“



MEASURING CHAMBER WITH SPACERS
MESSKAMMER MIT DISTANZSTÜCKEN
CHAMBRE DE MESURE AVEC PIÈCES
D'ÉCARTEMENT

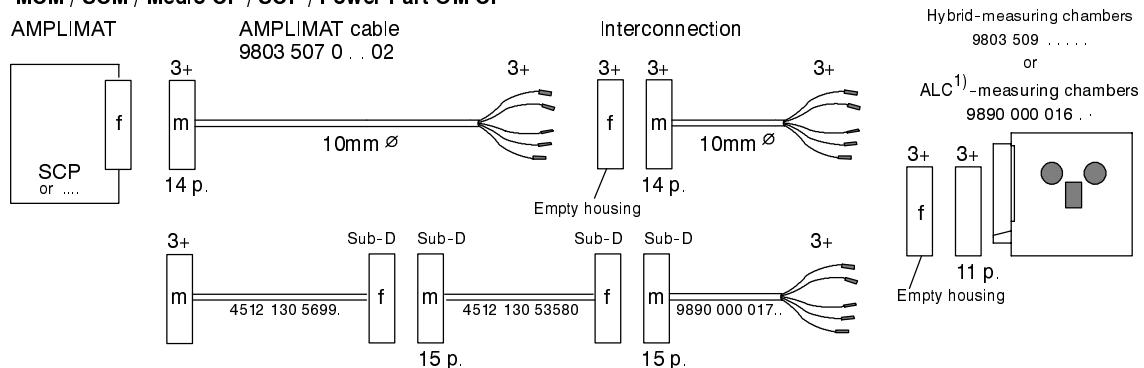
INSTALLATION OF 8mm MEASURING CHAMBER IN 16mm FRAME
EINBAU VON 8mm MESSKAMMER IN 16mm RAHMEN
INSTALLATION D'UNE CHAMBRE 8mm DANS UN CADRE 16mm

A3 / A4 88 08 09 RE

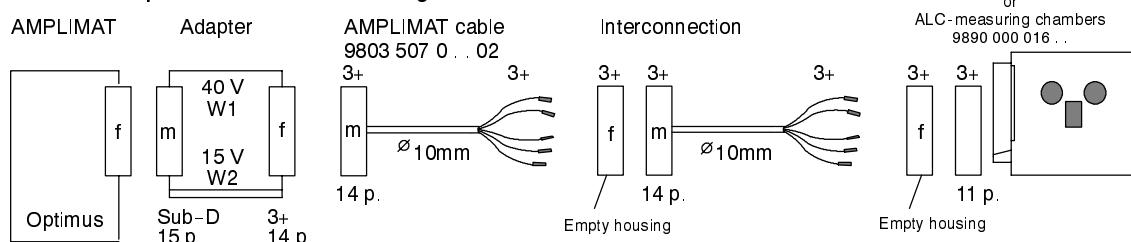
Connection versions AMPLIMAT-measuring chamber

interconnection only upon request.

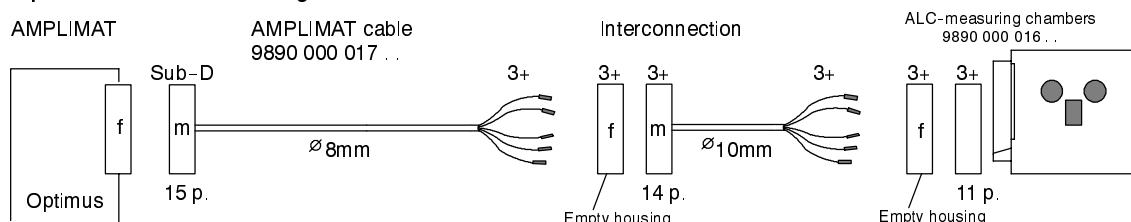
1. AMPLIMAT with 8mm measuring chambers to generators MCM / SCM / Medio CP / SCP / Power Part OM CP



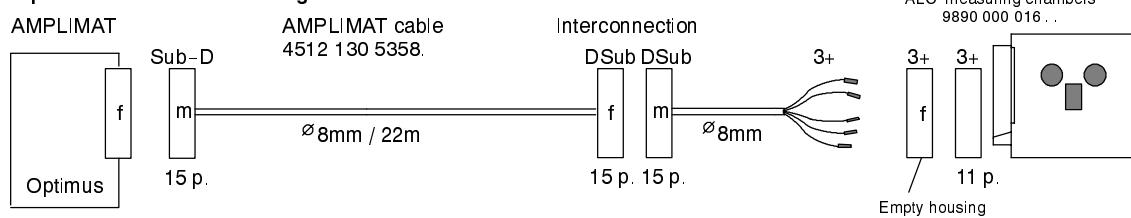
2. AMPLIMAT Optimus with 8mm measuring chambers



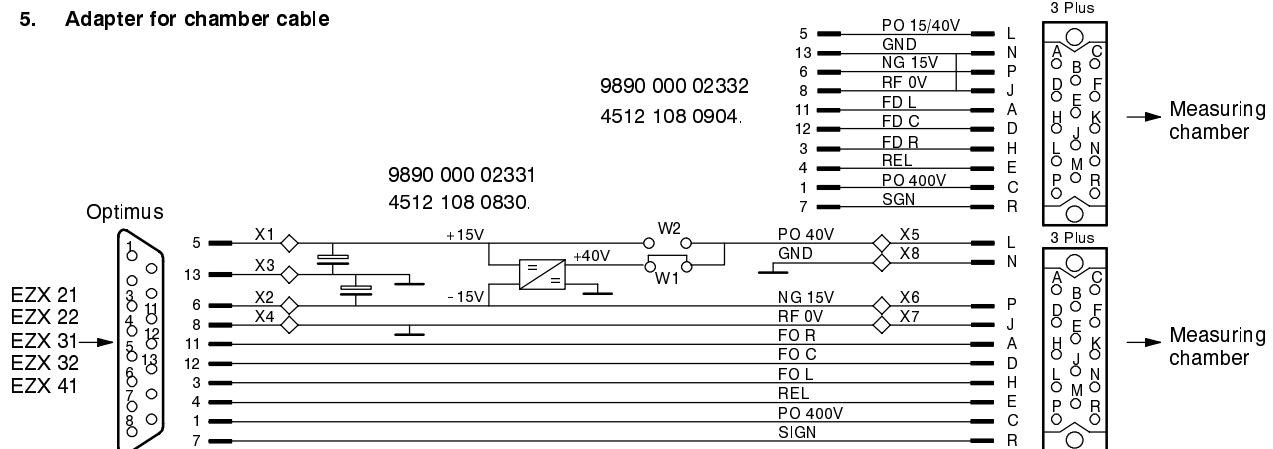
3. Optimus with ALC measuring chamber



4. Optimus with ALC measuring chamber



5. Adapter for chamber cable



Hybrid-measuring chamber: Supply voltage is 40V to 45V and -15V to -24V
ALC measuring chamber: Supply voltage is 15V to 45V and -15V to -24V

- 1) ALC : Automatic leakage compensation
- 2) f : female
- 3) m : male

Connection versions
AMPLIMAT-measuring chamber